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	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	28.35	31.83

=> file reg

	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	28.35	31.83

FILE 'REGISTRY' ENTERED AT 18:21:03 ON 01 NOV 2007
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STRUCTURE FILE UPDATES: 31 OCT 2007 HIGHEST RN 952181-70-3
DICTIONARY FILE UPDATES: 31 OCT 2007 HIGHEST RN 952181-70-3

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=>

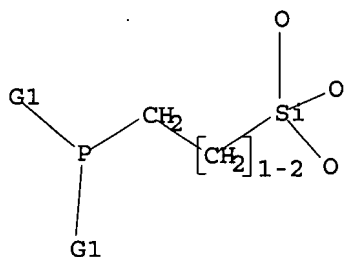
Uploading C:\Program Files\Stnexp\Queries\10732812-BROADRCE.str

L2 STRUCTURE UPLOADED

=> d l2

L2 HAS NO ANSWERS

L2 STR



G1 Me,Et,Ph

Structure attributes must be viewed using STN Express query preparation.

```
=> s 11
      22020136 1
        2086 DIETHYLPHOSPHINO
      24293915 2
        0 TRIETHOXYSULYLETHANE
L3      0 1-DIETHYLPHOSPHINO-2-TRIETHOXYSULYLETHANE
        (1(W)DIETHYLPHOSPHINO(W)2(W)TRIETHOXYSULYLETHANE)
```

```
=> s 12
SAMPLE SEARCH INITIATED 18:21:49 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -      53 TO ITERATE

100.0% PROCESSED      53 ITERATIONS      11 ANSWERS
SEARCH TIME: 00.00.01
```

```
FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:   624 TO   1496
PROJECTED ANSWERS:      22 TO   418
```

L4 11 SEA SSS SAM L2

```
=> s 12 full
FULL SEARCH INITIATED 18:21:54 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -      861 TO ITERATE
```

```
100.0% PROCESSED      861 ITERATIONS      178 ANSWERS
SEARCH TIME: 00.00.01
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L5 178 SEA SSS FUL L2

```
=> file caplus
COST IN U.S. DOLLARS      SINCE FILE      TOTAL
                        ENTRY  SESSION
FULL ESTIMATED COST      192.35      224.18
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FILE 'CAPLUS' ENTERED AT 18:22:02 ON 01 NOV 2007
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FILE LAST UPDATED: 31 Oct 2007 (20071031/ED)

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=> s 15

L6 242 L5

=> s 16 not py > 2003

4901458 PY > 2003

L7 214 L6 NOT PY > 2003

=> s 17 and copper

959550 COPPER

L8 7 L7 AND COPPER

=> d 18 ibib abs hitstr 1-

YOU HAVE REQUESTED DATA FROM 7 ANSWERS - CONTINUE? Y/(N):y

L8 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:997121 CAPLUS

DOCUMENT NUMBER: 140:137074

TITLE: Robust self-assembled monolayer as diffusion barrier for copper metalization

AUTHOR(S): Mikami, Noboru; Hata, Nobuhiro; Kikkawa, Takamaro; Machida, Hideaki

CORPORATE SOURCE: Association of Super-Advanced Electronics Technology (ASET), MIRAI, Tsukuba, Ibaraki, 305-8569, Japan

SOURCE: Applied Physics Letters (2003), 83(25), 5181-5183

CODEN: APPLAB; ISSN: 0003-6951

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Excellent results on copper (Cu) diffusion barrier characteristics of a self-assembled monolayer (SAM) of 2-(diphenylphosphino)ethyltriethoxy-silane are reported. The thickness and roughness of the SAM were determined by grazing incidence x-ray reflectometry as 1.7 and 0.3 nm, resp. To evaluate Cu diffusion barrier performance of the SAM, Cu/SiO₂/Si and Cu/SAM/SiO₂/Si MOS capacitors were prepared to measure their lifetimes under the 2 MV/cm elec. bias at 498-548 K. The mean times to failure obtained from the Weibull plots of time to failures were 33.6, 9.24, 4.57, and 2.03 h at 498, 523, 533 and 548 K, resp. These values show that the barrier characteristic of the SAM of 1.7 nm in thickness is comparable to that of phys.-vapor-deposited Ta film of 20 nm in thickness. The estimated lifetime of the SAM barrier at the device operation temperature of 392 K is longer than 10 yr.

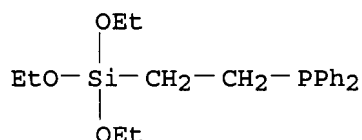
IT 18586-39-5, 2-(Diphenylphosphino)ethyltriethoxysilane

RL: TEM (Technical or engineered material use); USES (Uses)

(monolayers; robust self-assembled monolayer as diffusion barrier for copper metalization)

RN 18586-39-5 CAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:744563 CAPLUS

DOCUMENT NUMBER: 128:25955

TITLE: Formation of Crystalline Nanoclusters of Ag, Cu, Os, Pd, Pt, Re, or Ru in a Silica Xerogel Matrix from Single-Source Molecular Precursors

AUTHOR(S): Carpenter, Joseph P.; Lukehart, C. M.; Milne, Stephen B.; Henderson, D. O.; Mu, R.; Stock, S. R.

CORPORATE SOURCE: Department of Chemistry, Vanderbilt University, Nashville, TN, 37235, USA

SOURCE: Chemistry of Materials (1997), 9(12), 3164-3170
CODEN: CMATEX; ISSN: 0897-4756

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Metal complexes containing bifunctional ligands which possess alkoxysilyl functional groups have been prepared for seven metals of the first, second, or third transition metal series. Incorporation of these single-source precursors into silica xerogel matrixes using sol-gel chemical affords molecularly doped xerogels. Subsequent thermal treatment of these doped xerogels under reducing or oxidizing-then-reducing conditions affords nanoclusters of Ag, Cu, Os, Pd, Pt, Re, or Ru which are highly dispersed throughout the bulk of the xerogel matrix. Characterization of these nanocomposite materials by TEM, EDS, XRD, and electron diffraction indicates that the metal nanoclusters are highly crystalline. A visible spectrum of the silver nanocomposite shows the expected surface plasmon resonance near 415 nm.

IT 199395-67-0P 199395-68-1P 199395-69-2P

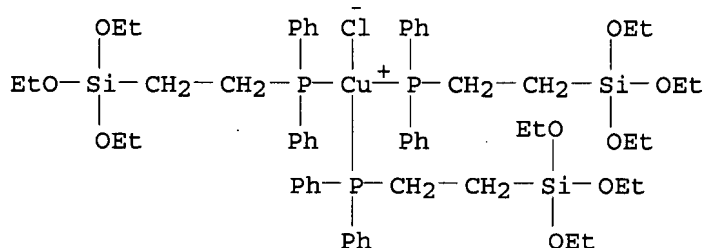
199395-70-5P 199395-72-7P

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)

(mol. precursor; formation of crystalline nanoclusters of transition metals in a silica xerogel matrix from single-source mol. precursors)

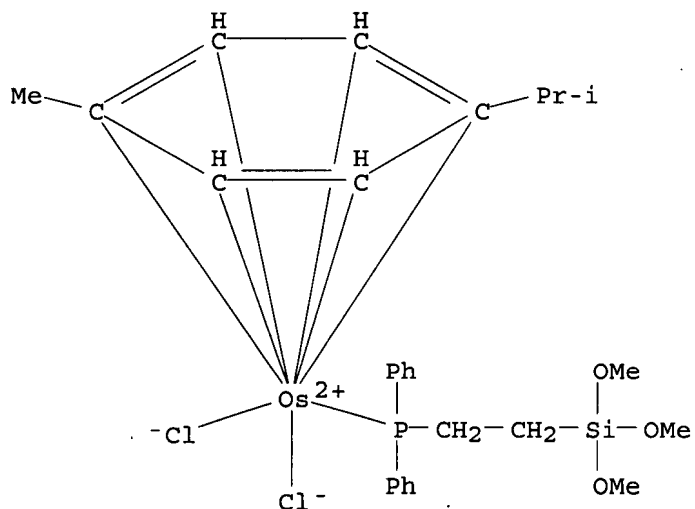
RN 199395-67-0 CAPLUS

CN Copper, chlorotris[diphenyl[2-(triethoxysilyl)ethyl]phosphine-κP]-, (T-4)- (9CI) (CA INDEX NAME)



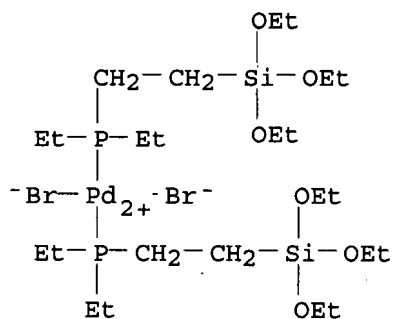
RN 199395-68-1 CAPLUS

CN Osmium, dichloro[diphenyl[2-(trimethoxysilyl)ethyl]phosphine-κP] [(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (9CI) (CA INDEX NAME)



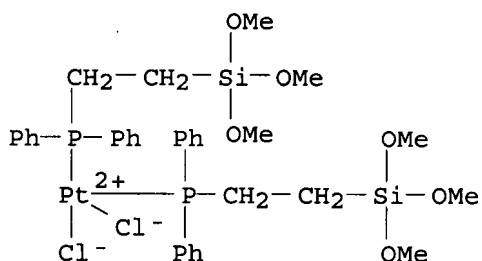
RN 199395-69-2 CAPLUS

CN Palladium, dibromobis[diethyl[2-(triethoxysilyl)ethyl]phosphine-κP]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 199395-70-5 CAPLUS

CN Platinum, dichlorobis[diphenyl[2-(trimethoxysilyl)ethyl]phosphine-κP]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 199395-72-7 CAPLUS

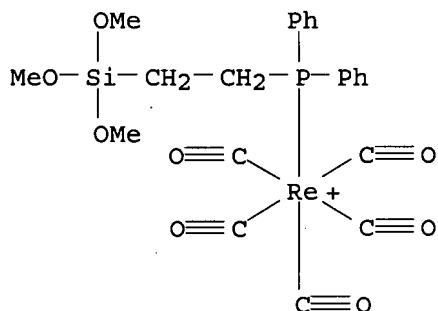
CN Rhenium(1+), pentacarbonyl[diphenyl[2-(trimethoxysilyl)ethyl]phosphine-κP]-, (OC-6-22)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 199395-71-6

CMF C22 H23 O8 P Re Si

CCI CCS

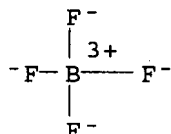


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



REFERENCE COUNT: 64 THERE ARE 64 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:769932 CAPLUS

DOCUMENT NUMBER: 123:163290

TITLE: Antimicrobial inorganic powders with phosphonium derivatives for industrial uses

INVENTOR(S): Takatsu, Shozo; Iijima, Toshio; Hashimoto, Kazuyoshi; Inaba, Yoshiko; Shimura, Seiji

PATENT ASSIGNEE(S): Nippon Chemical Ind, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07165518	A	19950627	JP 1993-342335	19931214
PRIORITY APPLN. INFO.:			JP 1993-342335	19931214

OTHER SOURCE(S): MARPAT 123:163290

AB An antimicrobial composition is prepared by coating inorg. powder with organosilicon phosphonium salts (R1)3SiR2P+(R3)(R5)R4·X- where R1 = alkoxy, halo, acyl, one of 3 R1 may be OH; R2 = C1-6 alkylene; R3, R4, R5 = H, C1-20 alkyl, aryl, aralkyl, etc.; X = anion. The powder is chemical stable, resistant to heat, and effective against a wide spectrum of microorganisms. The inorg. powders include oxides, hydroxides, silicates, aluminosilicates, phosphates, polyphosphates, borates, sulfates, carbonates, metallic acid salts of Mg, Ca, Ba, Sr, Zn, Cu, Mn, Ni, Al, Fe, Cr, Ti, Si, and Zr.

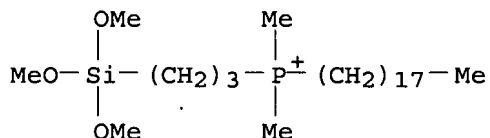
IT 167221-68-3

RL: BAC (Biological activity or effector, except adverse); BSU (Biological

study, unclassified); BIOL (Biological study)
 (inorg. powders with antimicrobial phosphonium metal derivs. for
 industrial uses)

RN 167221-68-3 CAPLUS

CN Phosphonium, dimethyloctadecyl[3-(trimethoxysilyl)propyl]-, chloride (9CI)
 (CA INDEX NAME)



● Cl⁻

L8 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:559767 CAPLUS

DOCUMENT NUMBER: 122:304513

TITLE: Metallic foil with adhesion-promoting layer

INVENTOR(S): Poutasse, Charles A., III; Kovacs, Andrea M.

PATENT ASSIGNEE(S): Gould Electronics Inc., USA

SOURCE: Eur. Pat. Appl., 23 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 637902	A1	19950208	EP 1994-305740	19940803
EP 637902	B1	19990331		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
AT 178451	T	19990415	AT 1994-305740	19940803
JP 07170064	A	19950704	JP 1994-185028	19940805
CN 1106977	A	19950816	CN 1994-115038	19940805
PRIORITY APPLN. INFO.:			US 1993-103075	A 19930806

OTHER SOURCE(S): MARPAT 122:304513

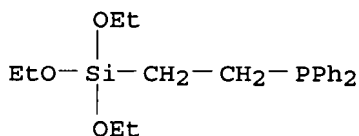
AB This invention relates to a metallic foil, especially for printed-circuit boards, with an adhesion-promoting layer overlying ≥1 side of the foil, the adhesion-promoting layer comprising ≥1 silane coupling agent, the base surface of the foil underlying the adhesion-promoting layer being characterized by the absence of added surface roughening, the absence of Cr, and the absence of a layer of Zn or Cr adhered to the base surface.

IT 18586-39-5, 2-(Diphenylphosphino) ethyl triethoxy silane

RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)
 (metallic foil with adhesion-promoting layer containing)

RN 18586-39-5 CAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (CA INDEX NAME)



L8 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:56153 CAPLUS
DOCUMENT NUMBER: 120:56153
TITLE: Silane coupling agents for metalization of polymeric substrates
INVENTOR(S): Swei, Gwo; Kristal, Kenneth W.
PATENT ASSIGNEE(S): Rogers Corp., USA
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5233067	A	19930803	US 1990-522375	19900508

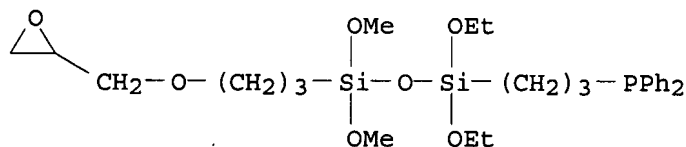
PRIORITY APPLN. INFO.: US 1990-522375 19900508

AB Polymeric substrates are metalized by contacting the surface of an etched substrate with a difunctional silane coupling agent and then depositing a metallic layer over the surface. Melt-extruded TE-97645 substrate was etched, treated successively with CH₂:CHSi(OMe)₃ (I) and HS(CH₂)₃Si(OMe)₃ (II), dried, baked, and coated electrolessly with Cu to give a sample showing peel strength 13-15 lb/in and no significant reduction after thermal aging, compared with 7 and significant reduction, resp., for a similar sample without I and II.

IT 151535-59-0 151535-61-4
RL: USES (Uses)
(coupling agent, for polymer metalization)

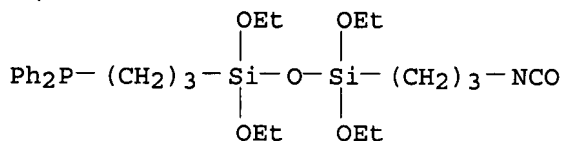
RN 151535-59-0 CAPLUS

CN Phosphine, [3-[1,1-diethoxy-3,3-dimethoxy-3-[3-(oxiranylmethoxy)propyl]disiloxanyl]propyl]diphenyl- (9CI) (CA INDEX NAME)



RN 151535-61-4 CAPLUS

CN Phosphine, [3-[1,1,3,3-tetraethoxy-3-(3-isocyanatopropyl)disiloxanyl]propyl]diphenyl- (9CI) (CA INDEX NAME)



L8 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1991:681283 CAPLUS
DOCUMENT NUMBER: 115:281283
TITLE: Manufacture of metal-coordinating organic silicon polymers
INVENTOR(S): Sakata, Kanji; Okizaki, Akio; Kunitake, Toyoki
PATENT ASSIGNEE(S): Research Development Corp. of Japan, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03170529	A	19910724	JP 1989-309926	19891129
JP 2795379	B2	19980910		

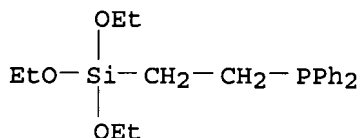
PRIORITY APPLN. INFO.: JP 1989-309926 19891129

AB Title polymers useful for absorption, separation, and concentration of metal ions are manufactured by coordinating $R_1nR_2mSi(OR)_4-n-m$ (R_1 = organic group containing metal ion coordinatable group; R_2 = organic group without metal ion coordinatable group; $m = 0-2$; $n = 1-3$) with metal ions, hydrolyzing and polycondensing the resulting metal ion-coordinated alkoxysilanes, and removing the metal ions. Thus, 10 parts $NH_2(CH_2)_3SiOMe_3$ (I) was treated with 35 parts $CuCl_2$ in MeOH, polymerized in the presence of NH_4OH at 150° for 3 h, and immersed in 1N HCl to give white polymer which showed Cu absorption 20% in 1% $CuCl_2$ for 24 h, vs. <0.01 when I was hydrolytically polymerized without $CuCl_2$.

IT 18586-39-5DP, 2-(Diphenylphosphino)ethyltriethoxysilane, metal complexes
RL: PREP (Preparation)
(manufacture and hydrolytic polymerization)

RN 18586-39-5 CAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (CA INDEX NAME)



L8 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1985:406483 CAPLUS

DOCUMENT NUMBER: 103:6483

TITLE: Gas chromatographic study on interactions of olefins with chemically bonded transition metal complexes

AUTHOR(S): Wasiak, Wieslaw

CORPORATE SOURCE: Wydzial Chem., Uniw. A. Mickiewicza, Poznan, 60-780, Pol.

SOURCE: Chemia Analityczna (Warsaw, Poland) (1984), 29(2), 211-20
CODEN: CANWAJ; ISSN: 0009-2223

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The packings $Si:Si(OEt)(CH_2)_2PPh_2.MCl_2$ ($M = Ni, Cu$) were prepared from the reaction of SiOH groups on silica surface with $(EtO)_3Si(CH_2)_2PPh_2$ and MCl_2 ; the complex is able to bind an addnl. ligand e.g., olefins. Lability of such complexes is a condition for chromatog. separation of alkenes. The columns packed with the bonded diphenylphosphine complexes were used for gas-chromatog. separation of mixts. of alkanes and alkenes, styrene derivs. ketones, and chloroalkanes.

IT 18586-39-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with metal chlorides and silica)

RN 18586-39-5 CAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (CA INDEX NAME)

